

Please amend claims 92, 93 and 97 as follows:

92. (Three-times amended) Bulk continuous filament yarn consisting essentially of substantially continuous filaments and having a bulk level of about 2 to about 20%, denier of about 500 to about 3000, shrinkage of about 1 to about 15% and Plug Crush Recovery of at least 85%, wherein the filaments consist of crystalline polypropylene homopolymer having a melting point of about 168°C or such crystalline polypropylene homopolymer having incorporated therein at least one additive that is a pigment, process aid, flame retardant, heat stabilizer, light stabilizer, antimicrobial agent, electrically conductive material, antistatic agent or stain resisting agent.

93. (Twice amended) The yarn of claim 92 wherein the filaments consist of the crystalline polypropylene homopolymer having incorporated therein at least one additive that is a pigment, process aid, flame retardant, heat stabilizer, light stabilizer, antimicrobial agent, electrically conductive material, antistatic agent or stain resisting agent.

97. (Twice amended) The yarn of claim 92 wherein the filaments consist of the crystalline polypropylene homopolymer.

REMARKS

Claims 105-113, 118-121 and 128-139 have been cancelled, leaving independent claim 92 and its dependent claims 93-104 and 122-124 pending. Claim 92 has been amended to recite that the filaments of the claimed yarns consist of crystalline homopolymer polypropylene having a melting point of about 168°C, and claims 93 and 97 have been amended to conform by deleting the word "essentially." Support for the amendments is found at page 28 line 12 describing homopolymer polypropylene as the preferred propylene polymer of the invented yarns, and at page 45 lines 2-3 stating that the homopolymer polypropylene has a melting point of about 168°C.

Claim Rejections – 35 USC 112

All claims previously pending were finally rejected as unpatentable in view of 35 USC 112, first paragraph, based on an assertion that the recitation with regard to polymer melting above about 160°C constitutes new matter.

As understood, the rejection appears to be based on a literal interpretation of the specification not reflective of the understanding of persons ordinarily skilled in the polypropylene fibers and yarns art. In any event, the rejection is moot as to the amended claims. The melting point recitation in claim 92 is fairly based in the express, literal text of the specification and clearly not new matter.

Therefore, the final rejection based on 35 USC 112 is inapplicable to the claims now pending.

Claim Rejections – 35 USC 103

All claims were finally rejected as unpatentable over each of US 5,455,305 (Galambos) and US 5,486,419 (Clementini). Reconsideration of the rejections is requested in view of the amendments made herein and the following discussion. The teachings of Galambos and Clementini are discussed in detail at paragraph 5 of the Office Action mailed April 10, 2003, and pages 7-15 of Applicants' Amendment And Response filed October 15, 2002, which are incorporated herein.

Briefly, both references recognize the problem of poor resilience of conventional homopolymer polypropylene yarns. Both indicate that capabilities for improvement in yarn properties are afforded by specific specialty propylene polymer compositions, though taken with their lack of detailed teachings and experimental demonstration of improvements in yarn properties, both references are more in the nature of invitations to experiment than teachings from which persons skilled in the fiber and yarns arts would appreciate or expect improvements in particular properties. Galambos' specialty propylene polymer is a so-called syndiotactic polypropylene. Those of Clementini are certain copolymers, terpolymers and heterophasic elastomeric materials prepared by sequentially polymerizing combinations of propylene, ethylene and/or C₄₋₈ olefins.

Both references teach that their propylene polymers melt below the "about 159-169°C, for example 162°C" melting point of normally solid, so-called isotactic polypropylene homopolymer of commerce (Galambos at Col. 3 I. 15-17 and Col. 10 I. 67 to Col. 11 I. 3; Clementini at Col. 11 I. 32-34, 40-52 and Table 4).

Galambos generally associates capabilities for improvement in yarns with blends of its lower melting syndiotactic polypropylene and conventional polypropylene homopolymer containing as little as 5 parts by weight of the former, though its claims require at least 10 parts by weight and its detailed description and examples purporting to demonstrate improvements are directed to 20% or more syndiotactic polypropylene. Even as to blends with 20-45 parts by weight in Galambos' examples, the present tense presentation of the examples and their reporting of alleged results only qualitatively and only in relative terms (See, e.g., Example 1 at Col. 9 l. 54-56; Example 2 at Col. 10 l. 39-43; Example 4 at Col. 11 l. 22-23; Example 5 at Col. 11 l. 37-41; Example 6 at Col. 11 l. 58-59) bespeak the lack of improvement taught by the reference. The lack of results would be well understood by persons ordinarily skilled in the art.

Clementini expressly requires at least 30% of its lower melting, co-, ter- or heterophase elastomeric polymer in blends with isotactic polypropylene and, correspondingly, blends with no more than 70% homopolymer, as acknowledged in paragraph 15 of the final rejection.

Taken as a whole, both references teach that their respective, lower melting specialty propylene polymers are present in substantial amounts in blends with isotactic polypropylene to provide capability for improvement of yarns. The final rejection, nonetheless, concludes that claims 92 and 105 in their form prior to the amendments herein are obvious due to an asserted overlap with blends according to the references, or failure to exclude the polymers taught by the references. Judged based on an understanding of the teachings of Galambos and Clementini, as a whole, by persons ordinarily skilled in the art, the final rejection does not reflect a fair interpretation of either the references or the claims. Even viewed literally, and without regard to the understanding of those skilled in the art, the references and the final rejection do not establish a prima facie case of obviousness. The references acknowledge deficient resilience of yarns of the very polypropylene that is claimed, and require substantial presence of lower melting resins excluded by the claims for even the improvements they hypothesize or purport to describe or demonstrate.


According to the amendments made herein, claims 105-113 and 118-121, all for yarns with filaments consisting essentially of polypropylene blended with other polymers, have been cancelled and claims 92, 93 and 97 have been amended to recite that the filaments of the claimed yarns "consist of" a homopolymer polypropylene melting at about 168°C. As such, even judged against the literal interpretation of Galambos and Clementini reflected in the final rejection, the overlap relied on in the rejection is excluded. Taken as a whole, both references would be understood by persons skilled in the art to support patentability. Both teach homopolymer polypropylene according to the amended claims provides yarns with deficient resilience, and both the syndiotactic polypropylene of Galambos and the copolymers, terpolymers and heterophase elastomeric polymers of Clementini are excluded by the amended claims.

In view of the foregoing, all claims remaining in the application are clearly nonobvious over Galambos and Clementini.

Conclusion

In view of the amendments made herein and the foregoing reasons for reconsideration of the rejections, it is submitted that the subject application is in condition for allowance and such action is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'S. L. Hensley', is written over a horizontal line.

Stephen L. Hensley,
Attorney for the Applicants
Registration Number 28,426
(630) 821-2462

Amended Claims

(additions to pending claims underlined and deletions therefrom bracketed)

92. (Three-times amended) Bulk continuous filament yarn consisting essentially of substantially continuous filaments and having a bulk level of about 2 to about 20%, denier of about 500 to about 3000, shrinkage of about 1 to about 15% and Plug Crush Recovery of at least 85%, wherein the filaments consist [essentially] of crystalline polypropylene homopolymer [that melts above about 160°C] having a melting point of about 168°C or such crystalline polypropylene homopolymer having incorporated therein at least one additive that is a pigment, process aid, flame retardant, heat stabilizer, light stabilizer, antimicrobial agent, electrically conductive material, antistatic agent or stain resisting agent.

93. (Twice amended) The yarn of claim 92 wherein the filaments consist [essentially] of the crystalline polypropylene homopolymer having incorporated therein at least one additive that is a pigment, process aid, flame retardant, heat stabilizer, light stabilizer, antimicrobial agent, electrically conductive material, antistatic agent or stain resisting agent.

97. (Twice amended) The yarn of claim 92 wherein the filaments consist [essentially] of the crystalline polypropylene homopolymer.